



AN2640SA-D Module Datasheet V1.1.1

GPlus IoT Technology Inc.

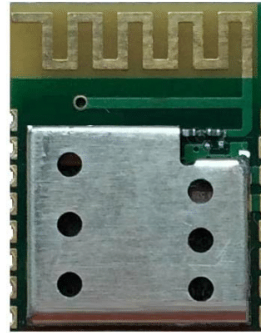
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Description

AN2640SA-D Module is designed based on CC2640F128 Bluetooth Smart (BLE4.1) System-on-Chip, fully supports the single mode Bluetooth Low Energy operation. The module provides the ability to either put your entire application into the integrated ARM Cortex M3 microcontroller, or use the module in Network Processor mode in conjunction with the microcontroller of your choice.

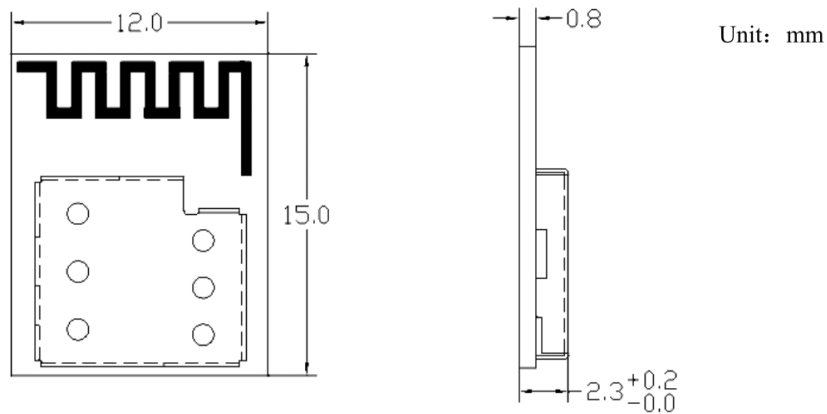


Features

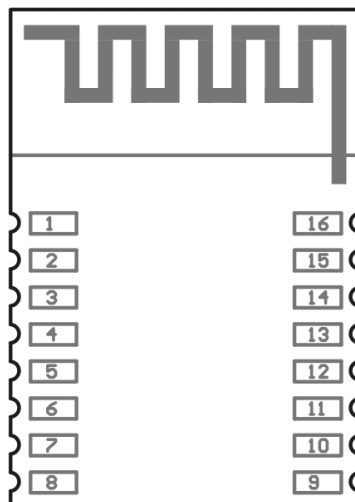
- Microcontroller
 - Powerful ARM® Cortex®-M3
 - EEMBC CoreMark® Score: 142
 - Up to 48-MHz Clock Speed
 - 128KB of In-System Programmable Flash
 - 8KB of SRAM for Cache
 - 20KB of Ultralow-Leakage SRAM
 - 2-Pin cJTAG and JTAG Debugging
 - Supports Over-The-Air Upgrade (OTA)
- Ultralow-Power Sensor Controller
 - Can Run Autonomous From the Rest of the System
 - 16-Bit Architecture
 - 2KB of Ultralow-Leakage SRAM for Code and Data
- Efficient Code Size Architecture, Placing Drivers, Bluetooth® Low Energy Controller, and Bootloader in ROM
- Peripherals
 - All Digital Peripheral Pins Can Be Routed to Any GPIO
 - Four General-Purpose Timer Modules (Eight 16-Bit or Four 32-Bit Timers, PWM Each)
- 12-Bit ADC, 200-ksamples/s, 8-Channel Analog MUX
- Continuous Time Comparator
- Ultralow-Power Analog Comparator
- Programmable Current Source
- UART
- 2× SSI (SPI, MICROWIRE, TI)
- I2C
- I2S
- Real-Time Clock (RTC)
- AES-128 Security Module
 - True Random Number Generator (TRNG)
- 10, 15, or 31 GPIOs, Depending on Package Option
- Support for Eight Capacitive-Sensing Buttons
- Integrated Temperature Sensor
- External System
 - On-Chip internal DC-DC Converter
 - Very Few External Components
 - Seamless Integration With the SimpleLink™ CC2590 and CC2592 Range Extenders
- Low Power

- Wide Supply Voltage Range
- Normal Operation: 1.8 to 3.8 V
- External Regulator Mode: 1.7 to 1.95 V
 - Active-Mode RX: 5.9 mA
 - Active-Mode TX at 0 dBm: 6.1 mA
 - Active-Mode TX at +5 dBm: 9.1 mA
 - Active-Mode MCU: 61 μ A/MHz
- Active-Mode MCU: 48.5 CoreMark/mA
- Active-Mode Sensor Controller: 8.2 μ A/MHz
- Standby: 1 μ A (RTC Running and RAM/CPU Retention)
- Shutdown: 100 nA (Wake Up on External Events)

Mechanical Drawing



Terminal Description

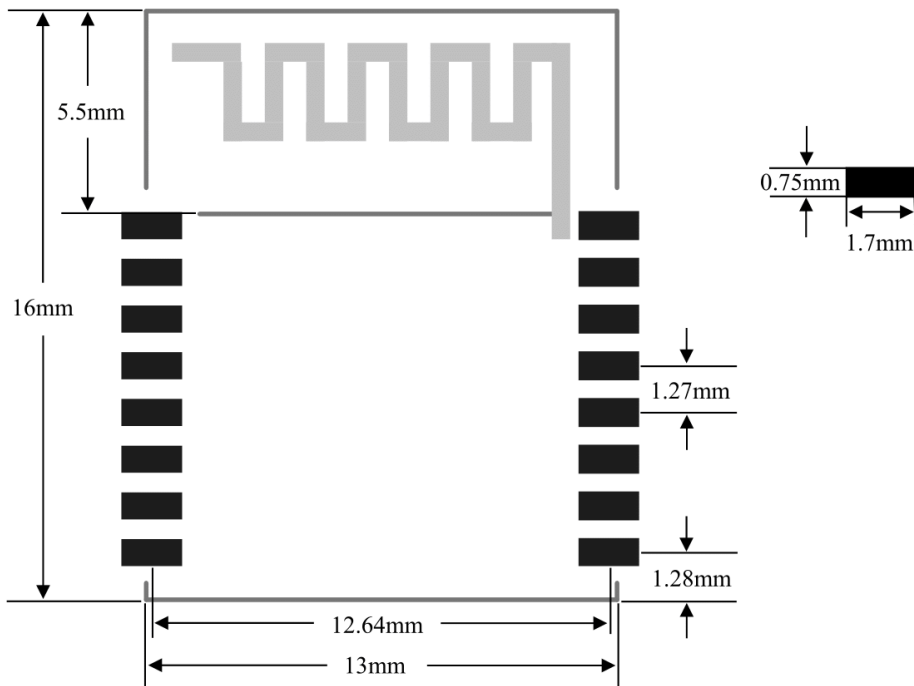


Pad Number	Name	Description	Pin Type
1	DIO0	GPIO, Sensor Controller, High drive capability	Digital I/O
2	DIO1	GPIO, Sensor Controller, High drive capability	Digital I/O
3	DIO2	GPIO, Sensor Controller, High drive capability	Digital I/O
4	JTAG-TMSC	JTAG TMSC	Digital I/O
5	JTAG-TCKC	JTAG TCKC	Digital I/O
6	DIO3	GPIO, High drive capability, JTAG_TDO	Digital I/O
7	DIO4	GPIO, High drive capability, JTAG_TDI	Digital I/O
8	VDD	1.8V to 3.8V main chip supply	Power
9	RESET_N	Reset, active-low. No internal pullup	Digital input
10	DIO5	GPIO, Sensor Controller, Analog	Digital/Analog I/O
11	DIO6	GPIO, Sensor Controller, Analog	Digital/Analog I/O
12	DIO7	GPIO, Sensor Controller, Analog	Digital/Analog I/O
13	GND	Connect to GND	Ground pin
14	GND	Connect to GND	Ground pin
15	DIO8	GPIO, Sensor Controller, Analog	Digital/Analog I/O
16	DIO9	GPIO, Sensor Controller, Analog	Digital/Analog I/O

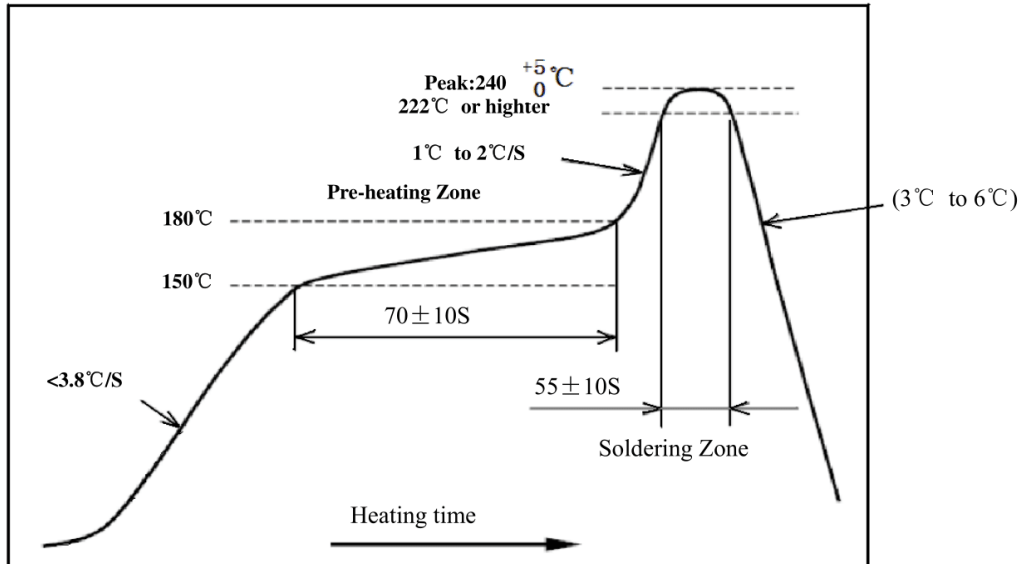
Specifications

Parameter		Min	Max	Unit	
Operating Voltage		1.8	3.8	V	
Operating Temperature		-40	85	°C	
Current Consumption	BLE Advertising (Interval 100mS)	0.23	-	mA	
	BLE Connection	Interval 30mS	0.35	-	mA
		Interval 50mS	0.22	-	mA
		Interval 100mS	0.12	-	mA
		Interval 500mS	0.02	-	mA
Sleep mode		-	1	µA	
TX Power		-21	+5	dBm	
RX Sensitivity		-87	-97	dBm	
Storage Temperature		-40	150	°C	

Recommended PCB Layout for Package



Soldering Recommendations



Contact details

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